LISTENING TO LEARN: A QUANTITATIVE STUDY OF LISTENING COMPREHENSION IN THE ELEMENTARY CLASSROOM

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PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF EDUCATION
IN
SPECIAL EDUCATION

THE UNIVERSITY OF NORTHERN BRITISH COLUMBIA

September 2019

Abstract

The goal of this research study was to investigate listening comprehension and demonstrate how a listening comprehension intervention could lead to improvement. This study intended to contribute to the knowledge base of research with elementary-aged students while providing educators with guidance in teaching listening. Two Grade 5 classes comprised of the participant groups; one class served as the intervention group, while the other class served as the control group. This study followed a quantitative research methodology using a quasi-experimental design that included pretesting and posttesting in listening and reading. Statistical analysis using t-tests compared the groups. The findings of this study did not achieve statistical significance but resulted in several educational significances. The implications of this study indicate that the task of designing an age-appropriate course and measuring improvement is challenging. Subsequent research in the area of listening comprehension course development and test development for this age group is recommended.

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ACKNOWLEDGEMENTS

I would like to thank my exemplary supervisor, Dr. Andrew Kitchenham, for his continual patience, ceaseless teachings, and support throughout this process. I am certain that if it were not for him, I would never have completed this project. His measured guidance, timely feedback, and effective communication skills kept me motivated to persevere through this project.

Additionally, I would like to acknowledge the contributions made by Les Malbon and Dr. Lantana M. Usman. I want to thank Les, whom I have known and trusted for over two decades, for the time and care that he took to both read my project and provide me with his guiding feedback. I also want to thank Dr. Lantana M. Usman for coming on board and providing her detailed feedback and expertise.

I would also like to express my gratitude toward the members of my school and school district for assisting me with bringing the study to fruition. Their willingness to go beyond their duties as learners, office staff, teachers, administrators, and superintendent's administrative staff, allowed for this study to ensue.

Finally, I would like to thank my family for their endless support during this process. This includes my dad, Fraser, whose opinion I value unconditionally and who encouraged me to get started with this process; my mom, Elaine, for tirelessly taking over with so many of my mom-duties so that I could focus on my studies; and my son, Declan, who has gifted me with his love and patience throughout this process. The maturity and understanding he has demonstrated made it possible for me to complete this project.

I could never have completed this Master's in Special Education without the amazing support and guidance of these people.

Chapter 1: Introduction

By week 25 in utero, the ears have developed enough for a fetus to respond to vibroacoustic stimulation (Birnholz, 2017). At first, it is mostly the mother's comforting heartbeat and voice that the fetus hears. Fast forward five or six years, and the young child enters his kindergarten classroom where he is expected to apply a wide range of listening skills that extend well beyond hearing. These skills may or may not naturally develop in a learner (Campbell, 2011; Tutolo, 1979). Hearing and listening, at times, are used interchangeably; they are not the same skill. Hearing involves the reception of sounds and is only a preliminary step in the listening process (Brownell, 2013). Listening, on the other hand, is described as a highly complex process involving a linkage from the ear to the brain often requiring conscious effort and is not something we can assume will develop automatically (Brownell & Wolvin, 2010).

Listening can be broken down into a variety of types, including, discriminative, comprehensive, critical, appreciative, and therapeutic, to name a few. This study includes a comprehensive examination of only one type of listening, comprehensive listening, which is used in lecture or presentation situations for the purposes of acquiring information. While there are myriad definitions of listening, this project defines listening as, "the process of receiving, attending to, and assigning meaning to aural and visual stimuli" (Wolvin & Coakley, 1996, p. 69). This project utilizes quantitative research methodology to measure the effects of learning listening strategies in the intermediate elementary classroom during lecture types of presentations intended to impart information to learners.

Significance of the Research

Listening is an essential component of communication. Effective listening can afford us enriching relationships, more enjoyment from our surroundings, academic success, and improved

professional and personal lives, according to Wolvin and Coakley (1996); however, ineffective listening can take these same aspects of life and negatively impact them (Brownell, 2013). Listening is one of the most basic skills involved in language development, and it is the most utilized language skill (Wolvin & Coakely, 1996), but how well do people listen? In other disciplines outside education, Cooper (1997) indicated that 60% of the mistakes made in business were due to poor listening. Salopek (1999) reported that 80% of the executives in her study rated listening as vital for task completion in the workplace and that 28% of those executives reported listening as the most lacking skill in their workforce.

The ubiquity of listening is evident in the research proposing that most of us listen to the equivalent of a book per day while we speak the equivalent of a book per week, and further states that approximately sixty percent of college students' communication is in the listening role (Brownell & Wolvin, 2010). No matter how hands-on and active educators make learning, a certain amount of knowledge and instruction is disseminated orally in presentation style. The objective of this project is to contribute to the area of comprehensive listening for elementary aged students by measuring the effects of listening strategy instruction on learning. Bodie et al. (2008) conveyed that if we are to gain insight into listening in a contextualized form, additional evidence-based listening instruction research in education is needed. This research project carries significance as it provides information about listening comprehension at the elementary school level where research is minimal.

The Professional Significance of the Study

Most of the comprehensive listening research has been done at the post-secondary level; this study sets out to apply listening instruction at the intermediate elementary level. Lessons and activities were obtained from a variety of resources.

Imhof (1998) conveyed that additional research in effective listening instruction methodology was needed. Bodie et al. (2008) presented a review of the current state of listening research. In it, they remind readers to always ask, "Where is the evidence?" Additionally, a need for more empirical data that is truly valid and reliable in terms of statistical analysis and sharing has been identified (Halley, Janusik, & Bodie, 2007). One intention of this study is to contribute some valid and reliable empirical evidence to this area of research. Bodie et al. (2008) posed the following questions, "How does one "effectively" integrate training into the educational curriculum? Does listening training actually increase listening skills? If so, how? What is the best model for listening training?" It is hoped that the results of this study may contribute to answering these questions and help to move this area of listening research in a direction from theory to practice by gathering quantitative data on the effectiveness of listening instruction.

Is listening instruction necessary? Wolvin and Coakley (1996) outlined misconceptions about listening. One fallacy is that listening competency develops naturally through the practice a student gains in the classroom, so there is no need for systematic listening training. This is simply not true. Nichols and Stephen (1957) outlined that in general, people don't know how to comprehensively listen. According to their research at universities, listeners will forget one-half of what they have learned within eight hours. These researchers attribute this "inability to listen" to a flaw at the classroom instruction level where a major focus on literacy has superseded listening.

Purpose of the Study, Research Question, and Problem Statement

Purpose of the Study. The purpose of this study is to conduct an experiment and to understand how a listening curriculum will impact learning at the intermediate elementary level; research on listening at this level of scholarship is sparse.

Research Questions. The project is guided by the following research questions:

(i). How will listening strategies taught in the classroom assist intermediate elementary students in becoming more skilled listeners for the purpose of learning in the classroom?

(ii). How does the delivery of comprehensive listening instruction impact listening performance in a lecture style presentation among intermediate level students?

(iii). Will instruction in listening comprehension positively transfer to reading comprehension?

Hypothesis Statement

H_0: There will be no statistically significant improvement in the experimental group's listening comprehension over the control group's listening comprehension when they are tested after a listening comprehension intervention is applied.

H_a: There will be a statistically significant improvement in the experimental group's listening comprehension over the control group's listening comprehension when tested after a listening comprehension intervention is applied.

Statement of the Problem

It would seem that teachers lack background knowledge and training in listening. The literature suggests a gap exists between listening theory and practice (Bodie et al., 2008). Hopper (2007) proposed that there is a lack in listening curriculum. This comes after a Google search for "listening skills" that provided a total of 100 websites of which 22 were related to K–12 education. Five websites actually provided information on developing listening skills at the

K-12 level. Hopper (2007) suggested that those interested in furthering listening education do the following: (a) identify the skills that should be taught by creating a type of scope and sequence; (b) identify and delineate how listening will be taught – for example, whether it will be paired with other skills in an integrated methodology or taught stand alone; and finally; (c) get the International Listening Association involved in collaborating with educational organizations to co-create resources, assessments, instructional supports and professional development opportunities.

Background of Study

It may be useful at this point to briefly explain the professional influences occurring in education today that bring relevance to this study. Recently, teachers in BC have gone through the process of adopting the redesigned curriculum (BC Ministry of Education 2016-17). Likewise, teachers in the US turn to a national document titled The Common Core State Standards (National Governors Association Centre for Best Practices, Council of Chief State School Officers, 2010). Both of these documents are government prepared and offer curricular guidance for teachers. The US's Common Core Standards extensively describes the listening skills to be taught. This document details the skills and scope and sequence from Kindergarten through to the end of the 12th grade. Themes that run throughout this aspect of the Language Arts Curriculum with increasing sophistication include: "developing caring conversational skills, working in a small group with specific roles and responsibilities, questioning for clarification, identifying the main idea and details, critical evaluation of information heard including evaluating evidence, rhetoric and fallacies reasoning, and synthesizing multiple sources" (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). BC's New Curriculum contains the Core Competency of Communication

within the larger strand of Language Arts. Listening is highlighted as a communication method in this curriculum. One of the Big Ideas states, "Through listening and speaking, we connect with others and share our world." Comprehending and connecting through listening is explicitly stated as a curricular competency. It highlights listening actively and using listening skills that match a student's developmental stage and describes items in teacher-talk before articulating them in student-friendly language as follows:

> 1) Connect and engage with others (to share and develop ideas). . . . I ask and respond to simple, direct questions. I am an active listener; I support and encourage the person speaking. I recognize that there are different points-of-view and I can disagree respectfully. 2) Acquire, interpret, and present information (includes Inquiries). . . . I can understand and share information about a topic that is important to me. . . . 3) Collaborate to plan, carry out, and review constructions and activities. . . . I can work with others to achieve a common goal; I do my share. I can take on roles and responsibilities in a group. I can summarize key ideas and identify the ways we agree (commonalities). . . . 4) Explain/recount and reflect on experiences and accomplishments. . . . I give, receive, and act on feedback. I can recount simple experiences and activities and tell something I learned. I can represent my learning and tell how it connects to my experiences and efforts. (British Columbia Ministry of Education, Core Competencies Communication section, 2015)

These current documents express the importance of listening at the curriculum development level of education today.

Listening skills are a requirement of classroom learning. Even when teachers are using an engaging instructional methodology that requires active student involvement much of the

time, there is still the need to listen to someone who is imparting information. At least two-thirds of the time devoted to instruction requires that students listen to lecture style presentations, and this only increases as students progress through the grades (Imhof, 2008).

Students in BC are graded on their listening skills in the Language Arts strand of their report cards, but are they really being taught how to listen? It would seem that a lack of listening instruction in classrooms is not a new issue. According to Goss (2007), listening has been largely dismissed as a skill focussed on in classrooms. Furthermore, Hopper (2007) stated that courses in listening are rare, and further, the instruction of these courses has been described as dubious. Additionally, there is a void in quality listening instructional support; this is an obstacle to the development of listening instruction in our classrooms. As previously mentioned, governments who oversee education have identified listening as an important skill so much so that it has been explicitly stated in the curriculum guidance documents. Students are being required to develop their skills in this area, but many teachers lack the knowledge and training to impart these skills – and so there lies a far-reaching gap. Students are not being taught, explicitly, how to listen to learn or develop these aspects of their communication skills due to a lack of teacher training and instructional support (Honeyford, 1980).

I am a teacher in BC, and I have never attended a formal listening course or class, nor have I spent time explicitly teaching students how to listen. I am not an exception. Teachers generally receive none to very minimal training in listening (Honeyford, 1980). According to Wolvin and Coakley (1996), listening is a neglected language arts skill at every level of education. Most teachers at the elementary grades do not teach students how to listen but rather teach them how to read, even though there is evidence pointing to a decline in listening as students move through their education (Geeting & Geeting 1976 cited in Brownell, 2013).

One current educational theme found in the USA and Canada today is Response to Intervention (RTI). This is a framework of instructional delivery based on three tiers and ensures struggling learners are caught early and provided with evidence-based interventions that focus on using quality, scientifically-based classroom instruction. With RTI, there is increased pressure being put on the classroom teacher to provide adequately proven instruction. This study is intended to move listening pedagogy toward becoming evidence-based classroom practice. Progress in this area will allow teachers to provide students with listening comprehension strategies knowing they are using evidence-based instruction.

Oral traditions are said to reach back multiple generations as they accumulate a collective of memories and knowledge that is shared between the speaker and the listener and between the past and the present (Hanson, 2009). Aboriginal knowledge and methodologies are being adopted into schools as seen by the new curriculum, professional development offerings, and a presence of Aboriginal cultural teachers coming into schools. Some principles of this approach include experiential learning, observation, and listening (The Ministry of Education, Aboriginal Education in BC, n.d.). Storytelling can be for the purposes of teaching, entertainment, prayer, personal expression, or involve history or power. Archibald speaks about oral traditions and shares that stories are to be listened to and reflected upon - as each has been created with a purpose (Siwal Si'Wes Library, Oral Traditions, Vimeo. n.d.). Archibald also made a recommendation to teachers when setting out to introduce storytelling in the oral tradition. She recommended that teachers interested in pursuing the Aboriginal methodology of storytelling seek a mentor in the school or school district to assist, as it is important to understand the stories and learn how to use them. Some protocols, in terms of proper use, include acknowledging the storyteller and the culture that it comes from and providing some cultural and contextual

background, for example, the ways in which the story is used in the culture. Archibald also recommends obtaining some guidance from the elders, including the protocols of sharing others' stories and obtaining permission to use the stories (Siwal Si'Wes Library, n.d.; Kovach, 2010).

The Aboriginal perspective on listening is outlined in how the BC Government recognizes listening and Aboriginal approaches in their career competencies webpage, illustrating that listening extends beyond a school requirement; it is a skill used throughout a lifetime both in one's personal life and work life. This online document has a page titled Aboriginal Relations Behavioural Competencies - Open Listening, which reminds us to put distractions aside when we listen to another respectfully. It explains that we all walk around with different filters or perceptions that are to be valued and understood and that we need to put judgment aside and take time to reflect on what we hear based on the context of it being shared (The Government of British Columbia - Personal Effectiveness Document n.d.). Many of the statements describing Open Listening behaviours align with the listening research literature.

Finally, in today's educational climate, there is the impetus for student engagement and active learning. Listening instruction that is goal oriented provides students with purpose and some activity when listening to their teacher, media, or other students during class and in small group discussions. Some teachers continue to complain about the decline in student attention and listening. If teachers are giving students a reason to listen and providing them with strategies on how to listen, conceivably this will assist with student engagement in lectures and increase attending to the material being transmitted – essentially improving students' listening skills and increasing learning.

Researcher's Context (Personal Location)

The idea to research classroom listening came out of two interactions in one weekend. The first interaction occurred on the Friday evening in a public-school gymnasium on the North Shore of Vancouver, BC. A visiting baseball coach from Chicago was offering young players and their parents baseball tips. We were asked, "What do you think the number one skill in baseball is?" Thinking of the boys who had recently given up the game, I uncharacteristically shot my hand up. I had been thinking about how these boys, in particular, struggled to attend to the coaches' cues. The Chicagoan coach called on me; "attention or listening," I said. I was right! The second interaction took place the following Saturday morning. I was running along our local seawall when I came across a local reading tutor. She shared a story about a conversation she had with a student of ours where he told her that the teachers kept telling him to listen and pay attention. The tutor had insightfully asked him, "What does it mean to listen or pay attention?" to which he replied, "I don't know."

These two interactions nudged me in the direction of listening research, but it is also because I struggle to see the forest for the leaves on the trees. I am a learner and listener who naturally focuses on details and sometimes misses the big idea. As a Learning Assistance Teacher, I witness the way many of our students sit in their classrooms with seemingly glazed-over eyes and appear to understand little about what they are doing or why they are doing it. Listening skills are only one part of this mysterious learning puzzle, but I feel imparting strategies on how to listen in class is a worthy project.

Guiding Theoretical Models

The two guiding theoretical models that have directed this research include cognitivism, as listening has been recognized under an information processing model; we comprehend

through processing what we take in. The other guiding theoretical model is constructivism, as perception is a key element in listening comprehension because listening has also been recognized as personal meaning making.

Chapter 2: Literature Review

Listening, as a field of research, is in its adolescence (Bodie, Worthington, Imhof, & Cooper, 2008). Depending on one's interpretation of "adolescence," this statement could imply that listening research is relatively young and in a tumultuous stage filled with fervidity, enhanced social engagement, and increased emotional intensity (Siegel, 2011), or it could imply that listening has not yet reached its full potential. Both seem appropriate.

This literature review chapter provides a brief overview of listening definitions and presents a working definition of listening. The literature explains the history of listening research, starting in the early 1920s and following a time-based progression ending with present-day research. The chapter presents conceptual frameworks and theories related to listening comprehension. Finally, the chapter presents a summary of the literature on listening comprehension.

Listening Definitions

There is an abundance of listening definitions. According to Brownell (2013), Rankin, one of the original listening researchers, proposed a definition in 1926 that focussed on understanding spoken language. Citing Barker, Goss (1982) suggested that listening involved attending, hearing, understanding, and remembering what is heard, while Wolvin's (1995) definition added nonverbal messages to the definition. As explained by Bodie et al. (2008), definitions of listening vary depending on the perspective of listening one takes. For this proposed research, Bodie et al. (2008)'s description works: "Listening is the attending, receiving, interpreting, and responding to messages presented aurally" (p. 11) because it is the most-comprehensive and lends itself to straightforward analysis.

Listening is used ubiquitously in one's life and deemed an essential skill (Brownell, 2013; Wolvin & Coakley, 1996). Effective listening is crucial to personal and professional relationships (Brownell, 2013). Many professionals rely heavily on active listening for their success. For example, in the medical field, proficient listening saves lives, for it is central to a physicians practice in making accurate diagnoses, and it helps to create trusting relationships with patients (Jagosh, Boudreau, Steinert, MacDonald & Ingram, 2011; Meldrum, 2011; Sigal & Kluger, 2018. Aeronautics is dependent on effective listening practices, for without them, tragedy may occur (Gilbert, 1988; Wolvin & Coakley, 1996). The business community has embraced listening to the point that they have created courses, assessment tools, and written books on the subject. Teachers are in a privileged position to work with children; effective listening may mean catching a quiet cry for help, unlocking how a student learns or discovering what is behind a behavioural struggle. How a teacher models listening influences both how a child feels (Cook-Sather, 2009) and how a child forms his listening habits (Gilbert, 1988). A teacher can exacerbate any trauma a child is living with, but the trauma-informed teacher may realize maladaptive reactions in class may be due to a hyper-arousal that is the adaptive behaviour of a child living in an "unsafe setting." Through her caring and listening, she can have a powerful therapeutic impact (Ludy-Dobson & Perry, 2010).

Although listening research has expanded in many directions over recent years, most of the literature is in agreement that in the context of education, it remains an area that is understudied and under-delivered. This opinion is not a new perspective. Janusik (2002), citing Nichols, who has been termed the "Father of Listening," acknowledged this issue when he wrote, "Why has education in the past been so little concerned with listening comprehension and so vigorously concerned with its parallel assimilative skill, reading?" (p. 154). Some reasons for

this deficiency include (1) a lack of teacher training, (2) potential for it to be undervalued, and (3) a shortage of instructional materials (Janusik, 2002).

History of Listening Research

Janusik (2002) provided a chronological summary of listening research spanning three historical timeframes: 1940 – 1979, the 1980s, and 1990 – 2001. According to Brownell (2013), some of the earliest listening research dates back to the 1920s by Rankin. His original dissertation, The Measurement of the Ability to Understand Spoken Language, pointed out that adults spend a disproportionate amount of time listening (Nichols, 1980). In 1945, a group of teachers established the Vertical Committee on Listening (Brown, 1987). During that time, Ralph Nichols instructed the first listening courses at the University of Minnesota (Wolvin, 2006); additional college courses followed Nichols' lead (Janusik, 2002). Early on, there was particular interest in listening comprehension, which lasted through the 1990s (Halley et al., 2007).

In the early 1970s, Barker and Weaver published the first listening texts (Janusik, 2002). Researchers had yet to conclude that listening instruction was an effective method for increasing listening skills (Janusik, 2002). During this time, researchers published the *Brown-Carlson Comprehension Scale* (Brown, 1987) and the *Sequential Test of Educational Progress* (STEP), and scholars concluded that there was a link between listening testing, intelligence, and reading (Janusik, 2002). According to Janusik (2002), Weaver approached listening from multiple perspectives, including psychology, sociology, and physiology. He expressed suspicion that reading and study skills were being taught under the guise of listening courses. During this time, there was a focus on instruction at the classroom level and in the private sector (Janusik, 2002). Most studies up to 1970 used the Brown-Carlsen test to measure the effectiveness of listening

instruction. The International Listening Association (ILA) was formed in 1979, currently serving as an international listening resource and community to 19 countries.

During the1980s, researchers published the *Watson-Barker Listening Test* and the *Kentucky Comprehensive Listening Test* (KCLT). However, the validity of the Watson-Barker was brought into question. During this time listening researchers became interested in listening beyond comprehension and began to look at the interpersonal aspects of this communication method (Janusik, 2002).

Between 1990 and 2001, listening became an electives course. Content often included the different ways in which we listen, goal setting, and practicing the skills related to enhanced listening. Additionally, more than half of the US companies in the private sector were offering their staff training in listening (Janusik, 2002).

Janusik (2002) made several recommendations in response to her summary of listening instruction. These recommendations included teaching listening in a framework of pre-listening, during-listening, and post-listening. She also recommended teaching theory, as it serves to help the listener know why a specific strategy or behaviour is effective (Janusik, 2002).

Subsequently, the International Listening Association published a paper entitled "Priorities of listening research: Four interrelated initiatives," also known as, "The White Paper". It requested that a collective effort be made by researchers to attempt to advance the field of listening (ILA, 2008). More recently, the ILA has been interested in looking at listening through a contextual lens in five areas: business, education, healthcare, religion/spirituality, and theory/research (Halley, Janusik, & Bodie, 2007; ILA, 2008).

Models of Listening

Bodie, Worthington, Imhof, and Cooper (2008) proposed that researchers attempt to consolidate this "fragmented field" by utilizing a heuristic model of listening that consists of three stages: (1) presage, which acknowledges individual differences listeners possess; (2) process, which takes overt behaviours and cognitive processes related to listening into account, highlighting the information-processing model of listening; and, (3) product, which incorporates the outcomes related to listening.

The word *presage* implies a prediction of something that will occur in the future. This prerequisite stage of listening takes the individual's internal make-up and the context of the listening situation into account. Deciding to listen or not, determining how much energy to expend on attending, one's affect, and the connection to content a listener possesses, are all factors that contribute to the presage stage (Bodie et al., 2008).

The process stage involves covert factors, including how one takes in the information being presented (i.e., top-down or bottom-up); the schema of the communication; one's memory; the degree to which attention is being put on the listening; and, the decoding and interpreting of listened-to material. The process stage also includes overt behaviours such as silence, asking a question, making some suggestions, offering some supportive emotional response, or following instructions. All of these mechanisms are at work within the listener, both observable and non-observable, and determine one's listening success. The listening product is the result that comes out of the listening situation. Typical products include gains in knowledge, impacts made in relationships, and an alteration in affect (Bodie et al., 2008).

Likewise, the Wolvin-Coakley Model of the Listening takes a sequential approach, but this model takes a slightly broader perspective on listening by including visual stimuli and

influencers such as culture and customs, behaviours and beliefs, and language, as they all contribute to forming one's perceptual filters (Wolvin & Coakley, 1996). Other influencers may include gender, age, hemispheric specialization, and physical and psychological states. Finally, one's attitude and interests influence the listening outcome. Wolvin and Coakley's representation of listening implies that the listener individually interprets stimuli and that one's schemata, which are the mental representations or scripts held for life experiences, affect listening. Schemata help listeners to create a framework that assists with selecting what to pay attention to and ultimately contribute to understanding (Wolvin & Coakley, 1996).

Selective attention influences what a listener focuses on. There are usually a variety of stimuli bombarding our system at any given time; it is the listener who must select what to attend to by using some discrimination mechanism. It is the amount of energy one can or is willing to spend to deal with competing input that determines their success in this area (Wolvin & Coakley, 1996).

Inside of an interactional framework, Wolvin and Coakley's model acknowledges the non-verbal aspects of communication and incorporates individual differences such as age, sex, and brain differences.

Brownell's HURIER listening model hangs on an acronym and promotes the idea that one's listening success is based on the following: one's attitude, learning about listening, and demonstrating specific behaviours. This theoretical framework of listening takes a systems perspective to communication consisting of the following processes:

H – Hearing as the reception of sound or sound discrimination and an element of focus

U – Understanding through auditory processing and self-monitoring

R – Responding by utilizing one of three memory systems that help us to interact

I – Interpreting and empathizing with the speaker to understand their perspective

E – Evaluating with an awareness of our perceptual filters and recognizing bias

R – Responding effectively and appropriately to what was heard

This theoretical perspective assumes that once a listener recognizes the importance of listening, motivation will be the outcome. It also promotes the idea that learning about listening improves listening, that acquiring knowledge and getting practice contributes to listening skill development, and that one needs to realize the purpose for listening so that they can choose the appropriate strategy to use at a particular time (Brownell, 2013).

Brownell (2013) acknowledged recent relational communication models by pointing out that communication involves striving for shared meaning through an exchange of speaking and listening. Listeners make meaning from perceiving and interpreting what they hear using their perceptual filters, negotiated meanings, and some communication framework or context. According to Brownell (2013), predispositions, expectations, and individual preferences are all factors that influence these hard to measure cognitive processes. Her model, like Wolvin and Coakley's, brings perceptual filters into account.

Listening Comprehension Theory

Goss (1982) proposed placing listening within a human *information-processing* framework. This extensively used model compartmentalizes listening into auditory processing and comprehension. Signal processing (SP) exists within the auditory processing stage, while literal processing (LP) and reflective processing (RP) co-occur in the comprehension stage. SP is where listeners digest aural information using their language processing skills; this involves phonemes, syntax, and semantics. From this point, two additional processing tasks emerge. Initially, LP emerges, where the listener makes the literal meaning from the aural message. Next, RP or "deep comprehension" happens. At this stage, the listener reaches a deeper level of understanding by applying higher order thinking to the message (Goss, 1982). Intellectual

activities such as making more advanced inferences, evaluating, critical listening, and appreciative listening all occur at this level of processing (Goss, 1982; Lundsteen, 1971). Goss (1982) suggested that strategy use determines how effectively these components are used, which implies that learning about listening and the use of listening strategies could influence the depth of comprehension attained.

Some researchers are exploring the reading and listening comprehension connection; this approach to instruction seems to have viable classroom utility. Aryadoust (2017) provided a synopsis of comprehension theory involving listening and reading comprehension research inside of a socio-cognitive information-processing framework where mental imagery and making inferences are considered critical elements to comprehension. Further, he suggested merging reading and listening into a single framework because building schema, spatial considerations, and referential relationships are present in comprehending, regardless of whether one is reading or listening.

Aryadoust (2017) explained that language processing takes place in the SP of the information-processing framework. Comprehension occurs in the literal and reflective processing domains as the words are recognized and connected to the semantic memory system. It is imperative that listeners recognize the beginning of words, as this is the springboard for making meaning from them (Aryadoust, 2017).

Aryadoust (2017) outlined two models before presenting his own. First was the construction-integration model of comprehension. It describes how a person takes what is stated or read 'verbatim,' in terms of vocabulary and syntax and then applies his or her background knowledge to it. Updates occur in a recursive looping process. This model highlights how world knowledge contributes to comprehension as one uses his or her personal experience of the world

to create mental imagery (Aryadoust, 2017). Second was the landscape theory of comprehension. This model features sources of activation coming from episodic memory, long-term memory, and semantic-memory. Making inferences also contributes to comprehension; this involves taking in information from the text or auditory input and combining it with what one has in mind before making an educated guess (Aryadoust, 2017).

Pertaining to the request for additional research into comprehension made in the ILA's White Paper, Aryadoust (2017) proposed his integrated theory of comprehension, which coalesces reading and listening comprehension. Like the information-processing model, this theory puts listening into a sequence of perception, recognition, selection, and integration. The initial stage, perception, relies on linguistic processing. The nervous system perceives stimuli through hearing and sight. Next, the iterative recognition process, or the beginning of meaning-making transpires. This step involves word recognition, something that usually ensues automatically and passively until something is missed, at which point it becomes effortful and strategic. A reader can re-read the text if a mishap occurs; however, when the stimulus is only listening, a certain amount of information may be lost due to the stimuli's quick disappearance. At the selection stage, words activate a semantic network and surface comprehension occurs, for meaning is now constructed and then joined by new input that revises and may deepen the level of understanding. Comprehension occurs through semantic meaning. This stage allows for preliminary mental imagery and lower level inferences based on word knowledge. Next is the higher level of comprehension, integration. This stage is similar to Goss's proposition of reflective processing. It involves making additional inferences and elaborations based on our schemas, world knowledge, and experiences. It is also dependent on our listening strategy use. Making inferences entails figuring out the connections and relationships that are shared by

events and individuals and then making deductions based on that information, while elaborations entail creating developed mental imagery (Aryadoust, 2017).

Bostrom (2011) is another researcher who referenced the ILA White Paper. He suggested that researchers specifically look at schemas and listening and listening's relationship to reading. According to Bostrom (2011), Nichols' 1948 study utilized an information-based cognitive approach where he lectured by reading factual material to his listening students. Bostrom (2011) reportedly discovered that retention relied, at least to some degree, on intelligence, and more specifically on one's vocabulary knowledge and how one organized incoming information. Following Nichols' work, researchers took an interest in assessments, measuring vocabulary, transition knowledge, direction following, and fact retention (Bostrom, 2011). Researchers uncovered that retention was a reflection of listening and that instructional efforts often rendered improvement (Bostrom, 2011; Imhof, 1998). These results validate listening education.

A common theme in much of the listening research is that cognition or intelligence plays a part in effective listening comprehension. Citing Bostrom (2011), in the 1960's, Charles Kelley debunked listening assessments commonly found in the literature such as the *Brown-Carlsen* and the *Sequential Tests of Educational Progress* (STEP). He uncovered more of a correlation between intelligence and these tests than listening and these tests, which led researchers to conclude that listening and intelligence were one of the same (Bostrom, 2011). According to Bostom (2011), Nichols also recognized a high correlation between intelligence and listening. Bostrom (2011) proposed that this ability, what we now refer to as verbal comprehension or verbal processing, contributes to our ability to take in what we hear in a lecture setting. He also added to Aryadoust's introduction to the semantic and episodic memory

systems by explaining that semantic memory relates to word knowledge and plays a large part in listening while episodic memory allows us to remember what occurred in episodes (Bostrom, 2011).

Bostrom (2011) explained that schemata exist in many of our interactions and cognitive processes. Possessing some knowledge of the schema for a situation allows for understanding of the "big picture" and assists us with acquiring information. He explained that we process language at a much faster rate than speech generally occurs. "Media speech" is usually delivered at approximately 100–125 words per minute, although most people can process language up to about five times that speed. Bostrom (2011) expressed that challenges exist in measuring listening and suggested using immediate response assessments, as they offer more accurate results than questionnaires and self-reporting on past events.

Both Aryadoust's and Bostrom's perspectives on listening are useful when considering listening to learn in the classroom. Aryadoust (2017) expressed that listening fits well within the reading curriculum. This idea is consistent with other research connecting reading and listening in terms of comprehension. The simple view of reading or "simple model," which some researchers espouse, proposes that reading requires two major skills: word recognition and listening comprehension, otherwise known as linguistic comprehension (Hogan, Adlof, & Alonzo, 2014). Listening comprehension and reading utilize the same linguistic processes. The four main cognitive demands of these activities include vocabulary knowledge, making inferences, background knowledge, and attention (Hogan et al., 2014). Lundsteen (1971) illustrated listening's influence on reading when he suggested that reading is generally overlaid upon a listening foundation.

Listening Comprehension Studies

Royer, Sinatra, and Schumer (1990) found that reading requires instruction over listening when it comes to comprehension. These researchers compared the progress made by 151 third and fourth-grade students. Testing was done three times over one year with an interruption of a summer holiday before the second assessment. They found a variance in their participants' progress with reading comprehension seemingly developing at a lesser rate without practice and instruction, while listening comprehension was reported to have improved even over the summer.

These researchers measured listening comprehension and reading comprehension using Sentence Verification Technique (SVT) tests. SVT is a process of associating sentences to the ones originally read or listened to. Each sentence is compared to an original and falls under one of the following categories: "same as original," "paraphrased," "meaning change," or "distractor." Based on the results of their study, they concluded that reading and listening comprehension develop somewhat separately. One could interpret the results of this study as being less supportive of listening instruction; however, this conclusion would contradict most of the listening research literature. Furthermore, testing comprehension strictly using SVT does not allow one to access higher levels of comprehension.

Keenan, Betjemann, Wadsworth, DeFries, and Olson (2006) examined reading and listening comprehension differences while considering genetics and environmental aetiologies. They questioned whether listening comprehension challenges arose from different factors than reading related issues. These researchers operated under the assumptions of the simple model, which suggests that reading comprehension is a result of an individual's decoding skills and listening comprehension skills (Berl et al., 2010; Hogan et al., 2014; Keenan et al., 2006;).

Keenan et al., enrolled seventy pairs of paternal and fraternal twins in their 2006 comprehension study. Genetics; shared environments, such as home-life; and different environmental inputs, such as peers and interests, were all considered. The participants' comprehension of multi-paragraph passages was measured. The results indicated higher correlations with identical twins over fraternal twins. These researchers also found that word recognition correlated more with reading comprehension than with listening comprehension. Keenan et al. (2006) concluded that there is a strong genetic component between listening comprehension and reading comprehension, and that the problems experienced by many students with reading disabilities extend to listening comprehension challenges. This finding could be considered relevant to teachers and case managers who may want to take a more careful look at listening when analyzing students' comprehension skills and planning targeted instruction.

In a similar vein of research, Carlisle and Felbinger (1991) examined the recall of ideas in text passages that were both read and listened to by Chicagoan fourth, sixth and eighth graders (n = 166). They explored the underlying issues of weak listening and/or reading comprehension and attempted to find out if challenges were caused by the same or different language comprehension functions. This research was initiated in response to certain reading researchers who proposed that listening comprehension might be a more accurate way of understanding reading ability than IQ testing (Carlisle & Felbinger, 1991). This study also investigated the speed of aural input and its effects on listening comprehension.

Using the SVT method of assessment, Carlisle and Felbinger (1991) measured the listening and reading comprehension skills of the 166. A passage was followed by 12 different corresponding sentences. Each sentence could be categorized as either like the original, paraphrased, included a meaning change, or placed as a distractor. These student participants

were asked to state “yes” to originals and paraphrased sentences and “no” to those that had undergone a meaning change or were distractors. Each student read and listened to passages at below grade level, at grade level, and above grade level until a ceiling was reached. The results of this study allowed the researchers to identify three types of learners who demonstrated poor comprehension: poor listeners, poor readers, and poor listener/readers.

Carlisle and Felbinger (1991) reported that auditory-processing issues, the temporariness of auditory input, the lack of control that listeners have, and the limitations of working memory all affect listening. They explained that students who possess poor word recognition when reading might experience a bottleneck effect in working memory, which can interfere with comprehension. Comprehension is further impaired by a lack of fluency and prosody in reading that does not exist in listening (Carlisle & Felbinger, 1991).

The results of this study indicate contradictory evidence to the reading researchers’ suggestion that listening comprehension could be used to measure optimal reading. Carlisle and Felbinger (1991) discovered that poor reading comprehension was not only due to poor word reading; comprehension problems arose even when word reading was strong. One finding was that the error patterns between poor readers and poor listener/readers were similar for sentence reading but not for listening. According to these results, the two groups do not listen in the same way. Moreover, poor listeners tend to process general ideas rather than specific details, regardless of whether they listen or read. They appear to exhibit some cognitive inflexibility based on what they predict they will hear. Poor listeners and poor listener/readers often tend to get stuck in their prediction of texts, which interferes with getting the final meaning (Carlisle & Felbinger, 1991).

Carlisle & Felbinger (1991) recommended exercising caution when using one modality to test comprehension for another modality. They concluded that listening and reading may utilize some of the same sub-processes when comprehending, but they also use different cognitive processes or levels of demand. Based on the analysis of their results, they indicated using listening as a measure of potential optimal reading skills lacks predictive validity (Carlisle & Felbinger, 1991). There was evidence of bias in this study due to all the participants scoring in the "above-average" range in comprehension according to their SAT scores.

One way to further explore the similarities or differences or both between reading and listening, regarding processing, is to approach it from a neuroanatomical perspective. Berl et al. (2010) compared listening and reading comprehension on a functional anatomical level by observing the parts of the brain that were recruited when students listened to a passage versus when they read a passage. Thirty-six, 7–12-year-old students were asked to answer ten comprehension-type questions while their brains were being scanned. Each student was evaluated for his or her reading level and full-scale IQ before being scanned. Neurological activation was measured using functional magnetic resonance imaging (fMRI). Each student participant read and listened to a story passage that required higher order language processing. The material used drew upon the participants' phonological, syntactical, and semantic processing skills, and it required them to access their prior knowledge and inferencing skills. Testing took place while students lay in an fMRI machine and both listened to passages and read passages placed on the ceiling of the scanner. Using fMRIs, brain regions were measured for activation while participants completed each task (Berl et al., 2010).

The results of these tests indicated that the size of activation is dependent on the stimuli and whether a person is reading or listening. The findings from this study indicated that reading

is a less lateralized process that draws upon a greater area of the brain than listening. This is particularly the case when syntax and semantic information is being processed visually. Most of the brain activity was left lateralized even once hemispheric dominance was accounted for, and there was a trend for more frontal activation in the older students. In the listening task, students who activated their frontal lobe demonstrated superior post-task comprehension. The results of this study indicated verbal IQ correlated better with listening comprehension (Berl et al., 2010).

This research suggests that listening and reading utilize much of the same brain areas, for which we can conclude that they both draw upon the same or similar cognitive processes. Knowledge of these similarities may assist with decision making around programming for instruction in listening and reading as previously suggested by Aryadoust.

This study has strong ecological validity, as the researchers were providing a differentiated level of stimuli based on students' ages and reading levels. However, there are a couple of shortcomings to this research. First is the homogeneity of the participants, as they tended to have higher Intelligence Quotients (IQ) and all were reportedly language disorder free. Second, is that the sample group consisted of only 36 participants; this is due to a fairly high attrition rate, as the study started out with seventy-four participants.

Aside from the scientific processes involved in listening, could something else more subjective play a part in listening ability? According to some researchers, people possess particular listening styles. One framework for this type of categorization includes *content, people, action,* and *time-oriented* styles of listening (Weaver, Watson, & Barker, 1996; Bodie, Worthington, & Gearhart, 2013). Content listeners tend to have a preference for complex, factual information (Weaver et al., 1996). Categorizing types of listeners has been reported to have issues with reliability and validity (Williams, Brown & Boyle, 2012; Bodie et al., 2013).

However, Worthington (2008) presented evidence of a robust correlation between *content listeners* and their *need for cognition* (NFC).

Bommelje, Houston, and Smither (2003) expressed that effective listening can be linked to success in school, but it cannot be connected to any particular personality type. Notwithstanding, NFC is described as a personality construct related to how a person processes information (Worthington, 2008). Caciappo and Petty (1982) re-introduced the concept of NFC as a type of personality trait related to one's tendency to enjoy engaging in thought. These researchers reported a strong association between need for cognition and intelligence (Caciappo & Petty, 1982). Similarly, Worthington (2008) investigated the connection between this listening type and having a propensity for systematically processing information.

Worthington (2008) set out to investigate which listening styles correlated with need for cognition by enrolling 251 university students ranging in age between 18 and 43 in a study. Over one 50–minute session, each participant filled out the Watson and Barker's Listening Styles Profile (LSP-16) and a scale developed by Caciappo and Petty that measured NFC. A positive correlation between content listeners and a higher need for cognition was revealed. Based on these findings, Worthington (2008) proposed that listening success could be associated with one's listening style and NFC, as these factors assist with maintaining attention while listening.

Some limitations of this study include that the participants lacked diversity; a majority of them were white, female college students. Another limitation was that there remains some uncertainty around the reliability in the correlation between NFC and content listening (Worthington, 2008). Finally, the whole idea of typing a listener, especially based on a questionnaire, is a precarious endeavour.

Glonek and King (2014) uncovered information about listening comprehension based on both the delivery of the content and the speed of delivery. These researchers made two hypotheses, (1) that information presented in narrative form will be recalled better than in expository form, and (2) that information presented at a slower rate will be remembered better than when it is performed at a compressed rate. They created a story and an expository piece. Both were about impromptu speech giving, and both provided listeners with the same information about the topic. All of the 262 university student participants received the same comprehension questions. The researchers formed the following groups: narrative with a low rate, narrative with a compressed presentation rate (30%), expository with a low rate, expository with a compressed presentation rate (30%), and a control group.

Glonek and King (2014) found that their participants recalled narrative information better than expository information. Additionally, the information presented at a regular rate was recalled more readily than information presented at a 30% compressed rate. Concerning the results of this study, memory can be categorized into semantic and episodic forms. Semantic memory consists of one's 'general understanding of the world, while episodic memory is more related to one's own experience of it. Episodic memory is activated when we listen to a story with a sequential pattern, as we attend to the emotional content, making it much more relational. To a greater degree, this form of memory contributes to learning due to the depth of thinking and processing that it requires. Furthermore, listeners can make core inferences when listening to a narrative structure over an expository structure (Glonek & King, 2014).

This concept of delivery demonstrates how educators can potentially transform expository information into a narrative as a conceivable way to heighten how effectively

information may be remembered. One highlight of this study's write-up is that the authors provided a transcript of the narrative and expository texts in their appendix.

Imhof (1998) suggested listening in a lecture type of setting requires a learner to adopt certain practices; these include synthesis, attitudinal and motivational manipulation, focus, some control of mental schema, and the use of metacognition. Imhof's study inquired into the listening behaviours of 554 university students. Areas of listening were categorized into the following: content, self, and the speaker. Listening timeframes included before, during, and after a lecture. Self-report was utilized to measure these aspects of listening. The participants of this study provided information on their listening habits by filling out a questionnaire.

A majority of the students reported that they didn't use any pre-listening strategies such as activating prior knowledge or setting listening goals, nor did they use revision strategies after a lecture (Imhof, 1998). Most participants felt they were using structure and summarizing to better understand the material and felt they could spot contradictions by the speaker if they occurred. A majority of the participants felt they did self-monitor their behaviour adequately for most of the lecture. Post-lecture strategies, such as using elaboration or modifying notes, were absent from most of their listening practice, and concentrating throughout the entire lecture was a challenge. If a speaker offered a personal opinion while presenting, interest was piqued, and eye contact with the speaker was deemed important (Imhof, 1998).

Imhof (1998) also enrolled 32 students, who had just completed a course in listening, to answer questions about what they thought they could do to improve their lecture listening and what they had observed about their listening. These students expressed that preparation was part of what they felt would enhance their listening. This process involves readying one's mind, finding out about the content ahead of time, thinking about the structure and context, and

considering one's expectations, while intentionally managing ones' focus. They also felt that managing any bias would be helpful. Attempting to catch the main idea and taking structured notes were also mentioned. Self-related improvements included increasing one's ability to concentrate, staying relaxed, and just being more self-aware as a listener. Finally, participants thought watching for the speaker's non-verbal communication, maintaining eye contact, and showing interest were all potentially beneficial to listening (Imhof, 1998).

Participants reported having become more self-aware, especially of their attention and motivation. Listening behaviours involving questioning, inferences, and elaborations, such as making mental representations, were also remarked upon. Overall, there was a belief that their listening strategy use had improved. The participants also reported being more aware of when they had stopped listening or when they experienced obstacles or breakdowns in their listening (Imhof, 1998).

Imhof (2001) expanded on her 1998 research by investigating the use and effectiveness of three listening strategies, or in a few cases, how the use of these strategies interfered with listening. She perused through 35 undergraduate students' listening logs. Interest management, asking pre-questions, and elaboration techniques were the three strategies focussed on (Imhof, 2001). These strategies are reported to improve information processing. Principally, interest management was reported as the key indicator of recall, as it facilitates the use of metacognition. Pre-questioning was reported to assist with structuring and prioritizing the information as relevant, helping with making inferences, and integrating new information into pre-existing semantic knowledge. Elaboration strategies include mental imagery and connecting new information to personal experience. These methods allow new information to hook onto something already known, which assists with retrieval (Imhof, 2001).

The participants of this study reported motivational issues, possessing a lack of prior knowledge, and having an emotional objection to a topic as their top three listening obstacles (Imhof, 2001). Two strategies used to combat these barriers to efficient listening included modifying one's attitude by attempting to generate topical interest where none naturally exists and exploring the source of disinterest in a topic. Participants also tried adjusting and monitoring their listening process. Methods used included setting listening goals, taking notes, relating new information to pre-existing knowledge, engaging in discussions, researching the topic, conversing ahead of time about the subject to increase engagement, connecting it to prior world-knowledge, and altering one's external environment to make it more conducive to listening (Imhof, 2001).

Findings from this study indicated that active interest building impacted motivation and attention the most (Imhof, 2001). Pre-questioning as a process of listening made sustaining attention about a topic easier and helped listeners to structure the new information while processing it at a deeper level. A majority of students reported feeling that they could comprehend the material better and participate more in discussions after pre-questioning a topic. A small number of students found this process caused interference as their listening ended up becoming more selective toward the questions instead of remaining open to the speaker (Imhof, 2001).

Elaboration was the other strategy used by the participants of this study (Imhof, 2001). Mental imagery was by far the elaboration technique implemented the most. Other methods used less so included emotional involvement, summarizing the storyline, considering how to apply the information, rephrasing and restructuring the information, highlighting relevant information, and consciously making connections with prior knowledge (Imhof, 2001).

The results of this study indicate that listeners can boost their listening by using interest-building strategies, pre-questioning, and elaboration techniques such as using mental imagery (Imhof, 2001). The main obstacles to listening in descending order included the following: motivational challenges, a lack of prior knowledge about a topic, emotional barriers, concerns with the physical environment, physical issues, and finally, problems with the speaker (Imhof, 2001).

Two independent raters coded the students' submissions. Inter-rater agreement was reportedly over 95%, but this was not calculated (Imhof, 2001). While Imhof pointed out that the answers she received did not necessarily mean real change occurred, a theme of increased feelings of responsibility from the listeners was evident (Imhof, 2001). This study found that college-level listening courses can bring about an increased awareness of listening habits and offer potential ways to improve listening.

Conclusion

The field of listening has been in existence for approximately a century, which makes it seem infantile compared to many other disciplines. There is no doubt that listening serves a pivotal role in communication. We can see this in both our private and professional lives. The definition of listening has grown in complexity with time, and the field agrees that no specific definition will fit all contexts. Separating listening from intelligence has proven to be challenging, as the two seem to be intertwined; therefore, finding valid measures of listening that do not access intelligence remains problematic. Courses in listening have been offered predominantly at the college level and in the business world.

A key focus of listening research has been listening comprehension in a classroom setting. More recently, interest in listening has expanded into a variety of contexts that reach

well beyond the classroom. There are several models of listening with most being presented using a sequential framework of taking in the stimuli, processing it, and responding to it. The information-processing framework dominates in the area of comprehension. While much remains elusive about this area of listening, researchers have indicated that reading and listening comprehension share many of the same processes and neural networks. Several researchers have suggested teaching these two skills together.

Further, investigators have expressed that there are factors that effect listening. Some of them, like attending to relevant stimuli, vocabulary knowledge, interest or motivation, personality constructs, memory capacities, knowledge of schemata, and what one does inside one's mind, occur within the listener. Other factors occur outside the listener. These include the speed of delivery, the form of delivery, and environmental influences.

This young field appears to be unsettled with an energy similar to teen angst, still waiting to make its mark in the world — especially in education. There may be several reasons for this, but it is the hope that through research, a pathway may be carved so that educators can fulfill their role in teaching students how to listen effectively.

Chapter 3: Research Methods

Listening is recognized as a pivotal communication method requiring teaching. This point is evidenced by the fact that valued Indigenous teachings, recently developed learning standards in BC's new curriculum, and the Common Core Standards Initiative in the USA all outline the importance of listening, yet listening instruction is absent from our education system when it comes to training teachers and teaching students how to skillfully listen, despite the evidence that students' listening comprehension improves after receiving instruction (Ferrari-Bridgers, Stroumbakis, Drini, Lynch, & Vogel, 2016; Ferrari-Bridges, Vogel, & Lynch, 2015).

The goals of this study are (1) to measure the impact instruction has on improving listening comprehension when students are introduced to a developmentally- appropriate listening course, and (2) to examine if there are any synergistic effects on students' reading comprehension. The hypothesis is that when elementary level students are introduced to an age-appropriate listening comprehension intervention, their listening skills will demonstrate statistically significant improvement over students who receive no instruction. The intention of this study is to contribute to the knowledge base of listening comprehension at the elementary level, to demonstrate to teachers the utility in teaching listening, and to provide some curricular guidance for those compelled to teach listening in their classrooms.

This chapter contains an outline of this study's research methodology and the rationale for using it. It provides an explanation of the intervention and details about the sample group. A description of the instrumentation, data collection, and an analysis plan follows. Included, are how the measurement tools were distributed, the data analysis used, and a brief mention of this study's guiding theoretical models. Important points about the ethical treatment of participants

and taking a principled approach to research are also outlined. Finally, this chapter concludes with a discussion about this study's validity and reliability.

Research Overview

Quantitative research methodology using a quasi-experimental design was chosen for this study (see Table 1). It is identical to true-experimental design, the most rigorous type, except that it does not require randomization of its participants (Gall, Gall, & Borg, 2007, Creswell, 2015). This methodology allowed me to test the effectiveness of a listening course by comparing two groups' pretest and posttest differences in listening and reading comprehension scores. Participants were grouped based on the class they were assigned to at the beginning of the school year.

A listening intervention was introduced as the independent variable, and the dependent variables were the changes made in listening and reading comprehension between the pretest and the posttest. The Jerry-Johns Basic Reading Inventory (BRI) was used to measure listening and reading comprehension. Scores in each of these skill areas were calculated separately. Both the listening portion and the reading portion of the pretest and posttest included two passages that were delivered similarly to both groups. Participants completed ten comprehension questions related to each of the four passages. By comparing the pretest and posttest scores of each group, a measure of potential improvement primarily in listening and secondarily in reading was measured. Campbell and Stanley (1963), in their analysis of experimental and quasi-experimental research methodology, describe the non-equivalent control group design as widespread, especially when research takes place in the classroom. When the two groups share similarity, as confirmed by a pretest, this study design is considered to control for internal

Table 1

Quasi-Experimental Design – Comparison Group Pretest/Posttest Design

NR Group One	O1	X	O2
NR Group Two	O1		O2

Key: NR – Non-Randomized, X -Treatment/Intervention, O1 – Pretest, O2 – Posttest

validity factors such as history, maturation, testing, and instrumentation (Campbell & Stanley, 1963).

This intervention was designed to provide students with a basic understanding of listening and practice with experiential listening activities. Most of the lecture information is based on Brownell and Wolvin's (2010) research, while many of the activities are from LinguiSystems (1988, 1992) which is a seminal program for listening. Knowledge, topics, and activities are outlined in Table 2.

Sampling

Two Grade 5 classes (n=44) in a public elementary school in North Vancouver, British Columbia, participated in this study. The intervention group (n=26) and control group (n=17) class make up included 14 boys and 12 girls and 8 boys and 10 girls respectively. This age group, and specifically these two classes, were chosen for logistical reasons related to the workings of an elementary school. The participants consisted of a heterogenous group of Grade 5 students aged approximately ten years. Diversity in terms of academic abilities, identifications, and socioeconomics was present. One of the classes, the intervention group, attended a listening course for 14 sessions, totalling approximately 17 hours of instruction, while the other class, the control group, received no specific listening instruction.

Table 2

Knowledge/Topics and Activities in Listening Comprehension Course

Knowledge/Topics	**Activities**
What is Listening? Why is Listening Important? Hearing versus Listening Note-Taking While Listening Active Listening The Models of Listening Listening as . . . - Affective - Cognitive - Behavioural - Relational Good Listening Ingredients Listening Related Skills Focus Motivation Dealing with Distractions Listening Filters Identifying your Listening Goals Visualizing Identifying the Main Idea Identifying Details Making Inferencing Indigenous Teachings in Storytelling/Listening	Listening Self-Assessment **PART ONE** - TUNING YOUR EARS - Recognizing Directions - Following Directions - Unreasonable Directions - Distorted Directions - Vague Directions - Lengthy Directions **PART TWO** – LISTENING - Implied Directions - Visualization - Making Inferences - Dealing with Unfamiliar Words - Vague Information - Details - Complex Information - Main Idea - Detail - Making Inferences **PART THREE** – INDIGENOUS TEACHINGS - Incorporating all Above Skills - Talking Stick - Storytelling /Oral Teachings - Story of Creation - Two Sisters

Instrumentation

Listening and reading was tested using the Jerry Johns Basic Reading Inventory (BRI – 12th edition). This instrument was chosen because it consists of a variety of forms suitable for either reading or listening. The BRI possesses specific listening comprehension passages. Another appealing feature is how widely used it is as a reading assessment, which makes it easily accessible to teachers. Furthermore, it is inexpensive, easy to access, and comes with everything one needs to assess both skills. Finally, administration is fairly straightforward as the manual provides clear instructions on how to administer and score it.

The BRI provides data on several of the critical comprehension skills, as every assessment includes a set of the following types of questions: six fact (F), one topic (T), one experience/evaluation (E), one inference (I), and one vocabulary (V). These sets of questions aligned well with the intervention's lesson targets on main idea, details, and making inferences.

Text passages were selected based on their Lexile number, length, and genre. The Lexile framework uses a linguistic algorithm to measure the complexity of a text based on its semantic and syntactical information. According to Johns, Elish-Piper, and Johns (2017), Schell explained that students are expected to read and listen with equal sophistication by Grade 6. Since these students were in Grade 5, a higher-level passage was appropriate for measuring listening. A Lexile range for the average Grade 5 student is expected to be between 770 – 1080. According to the BRI manual, the Grade 5 texts boast a Lexile range between 770 – 1080. All the forms used in this study were within this range. These passages have been chosen based on their length and the fact that they are expository.

According to Johns, Elish-Piper, and Johns (2017), several studies have highlighted the BRI. The conclusion reached is that it possesses reasonable reliability and validity to assess

students' reading; however, the authors caution that their criteria should not be used as absolute standards – but more as a guideline. According to Beiber in Johns, Elish-Piper, and Johns (2017), the test-retest reliability for fluency and comprehension at the Grade 5 level obtained a median score of 77.

Data Collection and Analysis Procedures

All grade five students received a notice explaining the study and a consent form that went home. The notice provided families with information about the study and the consent form required signatures from parents and student-participants. Teachers from both classes and the school office staff collected the consent forms, while the researcher remained blind to who was participating in the study. No incentives were offered for participation in this study.

Both classes were administered the BRI in their respective classrooms and/or in the school library**.** Each participant's scores in each of the skills was obtained both at the start and end of this study. An average was calculated in both reading and listening with each student participant, and then each group's scores were calculated to a class mean (Gall, Gall, & Borg, 2007). Statistical analysis was done using t-tests. After inputting the pretest and posttest scores, a mean value and p-value (0.05) were calculated using an alpha score with 95% certainty. The ideal result was if improvement was significantly better for the intervention group in both listening and reading. This outcome would support Aryadoust's integrated theory of comprehension. An outcome, where there was a listening improvement made by the intervention group that superseded the control group but the same was not found with reading, would have still been considered a positive result.

Test Administration

The test administration was completed as recommended in the BRI manual. Initially, the students read a passage, returned the passage to the test administrator and then answered ten comprehension questions related to the passage they had just read. This process was repeated a second time. The listening portion was delivered much the same way except that each text passage was read aloud to participants with mindfulness to volume, speed, and prosody by either the school librarian or the researcher. Students then wrote their answers in point form on an identical answer sheet to the reading passages form. Reading and listening were administered on different days so not to tire the participants.

Each student-participants' comprehension was evaluated based on the number correct out of ten. The manual states that a student's responses do not need to conform to the stated answers perfectly, but instead, they need to be similar in meaning. Reading and listening totals were calculated separately. Each participant's pretest scores and post test scores were averaged so that each participant obtained a score out of 10 in both reading and listening. Paired t-tests were conducted so that the difference in class mean scores in listening and reading could be calculated and compared and the hypothesis could be confirmed or disconfirmed.

Ethical Consideration of the Study

Because human participants were involved in this study, its design was reviewed by the University of Northern British Columbia's Research Ethics Board (REB). The REB ensures that ethical practices are used and that the safety and rights of all participants are at the forefront of a study. For example, consent was obtained from everyone involved, including students, parents or guardians, and gatekeepers. The consent forms filled out by students was worded using age-appropriate language, and all families were given a reasonable amount of time to consider their

involvement in this study. Because of traditional authority relations between adults and children, the researcher made every effort to mitigate any pressure a student may have felt, including teaching the course prior to knowing who was participating.

There were no physical or psychological risks related to this study that fell outside of regular classroom routines and learning practices; notwithstanding, every measure was taken to ensure the well-being of every student participant. Each participant's privacy was respected, and confidentiality was assured. No identifying information was made available to anyone not directly connected to this study. It is essential that no coercion to participate is present in an ethically-designed study. Students who did not provide consent forms had their test results excluded from the study. Furthermore, as a way to meet the right to service principle, the control group would be given an opportunity to learn the listening curriculum once the study was complete, assuming the results were that the listening intervention group scored statistically significantly better than the control group in listening.

Gate-keepers' consent was also required at the school and school district levels. This permission was requested using a formal letter outlining the study's content and assessment methods. The connection listening has to Indigenous teachings and BC's new curriculum was also highlighted. It described how the instructional time of other teachers would not be interrupted, except for the small amount of time spent discussing the study with both groups and the time spent completing the pretest and posttest. The letter to the gate-keepers also included the purpose of this study, the amount of time this study was expected to take, and an explanation of how the data was to be used and shared. Finally, a description of the potential benefits of this study to students and educators was provided.

All participants have the right to know the results of the research, so it was shared with students and their families in the form of a letter that was emailed home and via class discussion. Additional ethical considerations included missing data and report writing. Had participants been absent at the time of data collection, all their data was eliminated from the study. The write-up of this study has been done with honesty and integrity being a central tenet. The author believes that there was benefit to students from their participation in this study and that no harm came from it either physically or psychologically.

Discussion

In order to avoid contamination of measurement effects it is important to keep delivery of instructions and environmental conditions standardized when doing any repeated measures such as the pretests and posttests (Gall, Gall, and Borg, 2007). For this reason, it was intended that the same researcher would complete testing successively with both groups. Each group tested in the school library or their respective classrooms with the same test administrator for the most part.

If this study saw improvement in listening and reading with the intervention group, a conclusion will be made that this improvement was due to the exposure the intervention group had to listening instruction and practice. Consideration of any extraneous or confounding variables would help us to make our conclusion.

Internal validity threats compromise how confident we can be in concluding that our independent variable, the listening intervention, caused any improvement in listening and/or reading, while external validity threats decrease our confidence that our study's results would be transferrable to another population. Campbell and Stanley (1963) outlined several factors that can threaten internal and external validity. Each of these validity factors will be considered.

Measures were taken to ensure that no historical affect such as extra training on comprehension beyond the normal curricular delivery occurred. Maturation can occur physically or psychologically during an investigation. To avoid any impact maturation may create, this study was completed over approximately 7 weeks; moreover, both groups were maturing at the same time and are developmentally similar. The intervention group and the control group are perceived as equal in performance because as a whole, they are considered to come from the same demographic. Modern inclusive classrooms contain heterogeneous groupings when considering academics and behaviour. Neither group was expected to be unusually high or low performing, so it was not anticipated that statistical regression would threaten internal validity.

Experimental mortality, otherwise known as attrition, was not expected or would be minimal because this school sees little movement during the academic year. Experimental diffusion can occur when a treatment is perceived as desirable and is transferred over to the control group prior to the end of the study, leading to part of the treatment diffusing over to the control group. This phenomenon was avoided as the researcher and two fellow teachers were the only adults involved in this study, and an arrangement was made for curriculum delivery upon the completion of the study if the desired results were attained.

Compensatory rivalry by the control group, also known as the John Henry effect, is a psychological phenomenon where a control group becomes motivated to do well due to feeling in competition with the participant group. It has been known to cause inflation in the control group's performance, consequently shrinking the difference between the groups' performance. It was arranged that a positive finding meant that the curriculum would be provided to the control group. By knowing that they would receive the same instruction in listening, the hope was that this would minimize any chances of the John Henry effect.

It is possible for a study to be perceived in a variety of ways, including as either novel or disruptive. This perception can influence the results of the study. The idea behind the novelty and disruption effect is that results can be impacted positively when an investigation is considered novel, or conversely, the results can become negatively affected when the intervention or treatment is perceived as a disruption. Care was taken so that the intervention element of this study was delivered seamlessly as part of the Language Arts curriculum with the hope of it being perceived as neither novel nor disruptive.

One potential influencing factor that could impact comprehension is any experience students may have had with the content, which may contribute to their background knowledge about a passage. This is something that cannot be controlled.

Pretest and posttest sensitization can occur when tests react with the intervention's effect and therefore the study's results. In this study, both the intervention group and the control group completed both the pretest and posttest. The pretest is much like the formative assessment often done before instruction, and the posttest is much like the summative assessment often administered after instruction. Since both groups took the tests there is no threat of test sensitization in this study.

External validity is related to being able to generalize the effects of a study beyond the experimental sample to the regular population. The hope is that the participant population a researcher has access to will respond to the treatment in the same way as would the rest of the population. One factor that may threaten this area of the study is varied demographics. The participants of the current study are from a higher socio-economic area of North Vancouver; however, there is a fair amount of diversity within this population. While both groups consisted of students with varied socio-economic status and a number of English Language Learners

(ELL), the intervention group consisted of more students with identifications related to learning disabilities. Both classes had a similar make up of students with giftedness.

Another aspect of external validity is related to something termed personological variable interaction, which describes the fact that certain people are going to respond better to a treatment based on their age, gender, level of anxiety, or personality. In the case of this study, not much will be done to match this course to gender, levels of anxiousness, or personality, but the listening intervention has been developed with the intention of being appropriate for a grade five class. Attention has been given to providing a variety of activities that should at least target a range of learning preferences. Finally, in an attempt to soothe any nervousness, the researcher set out to create a safe learning and testing environment for everyone. This study's course took place in a classroom as part of the Language Arts fabric. This environment was the same classroom that was used when teaching the regular curriculum. Consequently, the ecological validity of this study is high.

Chapter 4: Results and Discussion

Chapter 1 introduced the concept of listening and explained the purpose of this study. Chapter 2 provided a definition of listening and surveyed the professional literature on it. Chapter 3 outlined the research methods used in this study as they related to the research question: "Will listening strategies taught in the classroom assist intermediate elementary students in becoming more skilled listeners for the purposes of learning in the classroom?".

This chapter contains two sections, the results and the discussion. The results section explains the statistical analysis involved in collecting raw data. To start, it includes a breakdown of the Kolmogorov-Smirnov and Shapiro-Wilk Tests of normality where an investigation into whether our results followed along the normal bell-curve, a necessary prerequisite to t-testing, was initiated. Next, the Levene test and t-tests were performed. These tests provided us with information related to the equality of means and allowed us to compare the results of our two groups in both listening and reading. Finally, McNemar tests in both listening and reading provided us with information about the difficulty levels of the Jerry-Johns BRI assessment the students were administered during pretesting and posttesting. The discussion portion of this chapter provides a commentary on the results. Confounding variables that were not considered prior to the study such as sample size, statistical constraints, and new insights related to the challenge of the testing both in terms of its content and the environment are outlined.

Pre- and Posttest Results

Preliminary steps involved pretesting and comparing baseline performance in both listening and reading. Raw data was collected from each participant's scores on two pretests and two posttests in both listening and reading. The two test scores in each area were then averaged, using the mean of the two scores, so that the raw data comprised of one (averaged) pretest

Table 3

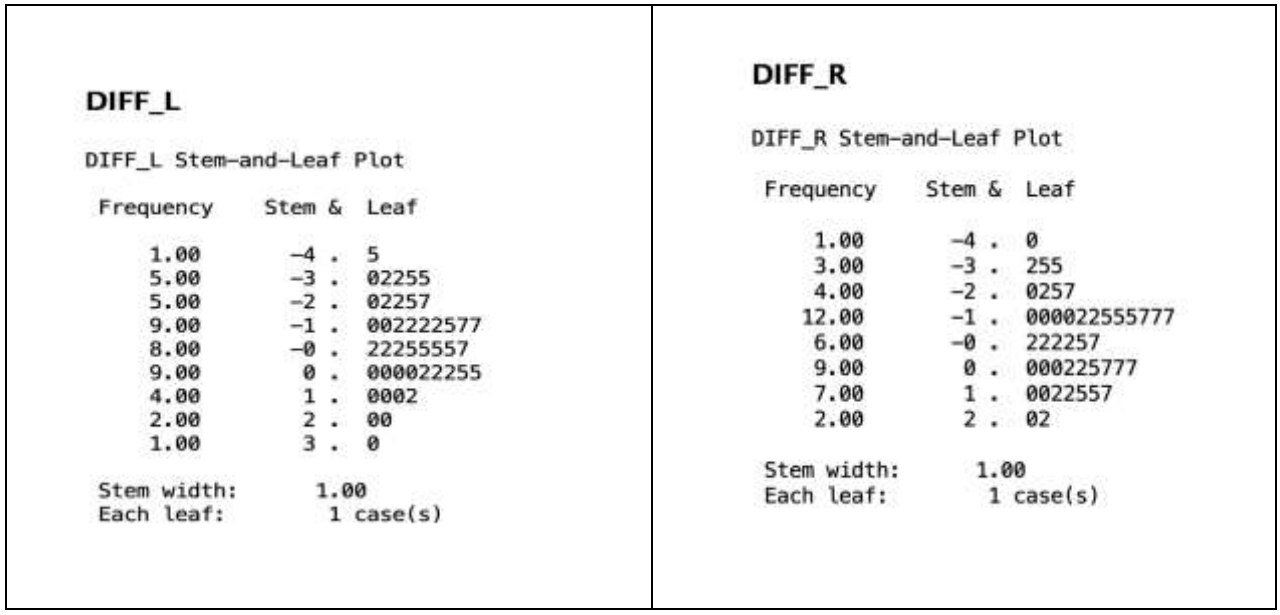
Kolmogorov-Smirnov and Shapiro-Wilk Tests of Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DIFF_R	.083	44	.200*	.978	44	.567
DIFF_L	.096	44	.200*	.987	44	.904

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction



DIFF_L

DIFF_L Stem-and-Leaf Plot

Frequency	Stem &	Leaf
1.00	−4 .	5
5.00	−3 .	02255
5.00	−2 .	02257
9.00	−1 .	002222577
8.00	−0 .	22255557
9.00	0 .	000022255
4.00	1 .	0002
2.00	2 .	00
1.00	3 .	0

Stem width: 1.00
Each leaf: 1 case(s)

DIFF_R

DIFF_R Stem-and-Leaf Plot

Frequency	Stem &	Leaf
1.00	−4 .	0
3.00	−3 .	255
4.00	−2 .	0257
12.00	−1 .	000022555777
6.00	−0 .	222257
9.00	0 .	000225777
7.00	1 .	0022557
2.00	2 .	02

Stem width: 1.00
Each leaf: 1 case(s)

Figure 1. Step-and-leaf plots demonstrating normality in listening and reading.

listening score, one (averaged) posttest listening score, one (averaged) pretest reading score, and one (averaged) posttest reading score. Once these data were tabulated on an Excel spreadsheet, the process of statistical analysis was initiated; this process involved three types of tests: (1) The first was applied to see if the scores passed a test of normality, meaning that they were normally

distributed along the bell-curve; (2) next, a test was run to compare each group's means and investigate whether a difference in scores reached statistical significance; and, (3) the final test investigated details related to the difficulty of the pretests and the posttests.

Statistical analysis was performed using the IBM Statistical Package for Social Sciences for Macintosh, Version 25.0. Two tests for normality of the raw data were applied first. These tests included the Kolmogorov-Smirnov (K-S Test) and the Shapiro-Wilk. Both of these tests' results indicated that (a) the change in listening scores rendered t-statistics for DIFF_L(44) = 0.096, with p = 0.20 with the K-S test and p-value = 0.904 with the Shapiro-Wilk test; and, (b) the reading scores similarly resulted in test-statistics for DIFF_R(44) = .08, p-value = 0.20 with the Kolmogorov-Smirnov and p-value = 0.567 with the Shapiro-Wilk. As the p-value was higher than 0.05 in all cases, we do not reject and thus must accept the null hypothesis that the scores of both groups in listening and reading are distributed normally (see Table 3).

Based on the scores falling within a normal distribution, I decided to perform a t-test, which is a type of inferential statistics test. Its results would provide information on whether the differences in the groups' performance was statistically significant or not. Each of the two participant groups, intervention and control, served as the two independent samples. As shown in Table 4, there were 26 participants in the intervention group and 17 participants in the control group for both listening and reading. The mean difference in listening for the intervention group was -0.66 with a standard deviation (SD) of 1.83, while the control group's mean difference was -1.03; SD =1.37. For reading, the group statistic conveyed that the intervention group's mean difference was -0.76; SD = 1.37, and the control group mean difference was -0.40; SD = 1.86.

First, the Levene test compared the variances of the two groups and confirmed the homogeneity (approximate equality of variances) of the two groups, intervention and control, in

Table 4

T-Test Group Statistic

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
DIFF_R	INT	26	-.7615	1.37785	.27022
	CON	17	-.3971	1.86468	.45225
DIFF_L	INT	26	-.6635	1.82749	.35840
	CON	17	-1.0294	1.37467	.33341

Table 5

Levene Test for Equality of Variances and t-test for Equality of Means

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
DIFF_R	Equal variances assumed	2.406	.129	-.737	41	.465	-.36448	.49459	-1.36333	.63437
	Equal variances not assumed			-.692	27.241	.495	-.36448	.52683	-1.44500	.71604
DIFF_L	Equal variances assumed	1.904	.175	.704	41	.485	.36595	.51948	-.68315	1.41505
	Equal variances not assumed			.748	40.086	.459	.36595	.48950	-.62330	1.35520

both listening and reading (see Table 5). The null hypothesis for the Levene test is that both groups have equal variances; this Levene test confirmed the null hypothesis with p-values higher than 0.05 (= 0.175 for listening and = 0.129 for reading). Based on these results, it can be assumed that the two groups are homogeneous and therefore the so-called "pooled variances" were computed in both cases.

The t-test is used to provide information on the differences in performance between two independent samples; in our case, we were comparing differences in improvement between the

control group and the intervention group, where the "improvement" was the difference in grades between post-test and pre-test for each student. The null hypothesis for this independent samples t-test is that the two groups will perform equally $H_o : \mu_1 = \mu_2$, while the alternative hypothesis is that the intervention group will perform better and that difference will be statistically significant $H_a : \mu_1 \geq \mu_2$, (with the intervention group being μ_1).

The difference of the listening test between intervention cf. control gave t-statistics = .704 with one-tailed p-value = 0.485/2 = 0.243, and the difference of the reading test between intervention cf. control gave t-statistics = -.737 with one-tailed p-value = 0.465/2 = 0.233. Both of these p-values are higher than the 0.05; therefore, I was not able to reject the null hypothesis of equal means between the two groups in both listening and reading on a 5% significance level. Noteworthy is that in listening, the intervention group outperformed the control group, and in reading, the control group outperformed the intervention group.

While the result for listening was positive for the intervention group over the control group, it was not statistically significant. The listening scores decreased by 0.66 for the intervention group and by 1.03 for the control group. Similarly, the reading scores went down by 0.76 for the intervention group and by 0.40 for the control group. From this fact, I conjectured that the post-tests were possibly more challenging for students than the pre-tests. To prove this conjecture, I decided to apply the McNemar test using a passing point of above six (see Table 6). The null hypothesis is that both tests are equally difficult, which we checked on a 5% significance level. The results of the McNemar tests indicated that 10 students passed the pre-test but failed the post-test, while only four students failed the pre-test but passed the post-test in listening; p-value = 0.18. The reading results convey a similar pattern. Nine students passed the pre-test but failed the post-test, while only four students failed the pre-test but passed

Table 6

McNemar Tests of Reading (R) and Listening(L) – Comparing Pre- and Posttest Difficulty

PASS_PRE_R & PASS_POST_R

	PASS_POST_R	
PASS_PRE_R	0	1
0	11	2
1	9	22

PASS_PRE_L & PASS_POST_L

	PASS_POST_L	
PASS_PRE_L	0	1
0	12	4
1	10	18

Test Statistics[a]

	PASS_PRE_R & PASS_POST_R	PASS_PRE_L & PASS_POST_L
N	44	44
Exact Sig. (2-tailed)	.065[b]	.180[b]

a. McNemar Test

b. Binomial distribution used.

the posttest; p- value = 0.065. As both p-values are greater than 0.05, we did not reject the null hypothesis at 5% significance level; however, for reading we may reject the null hypothesis on 10% significance level. Thus, on 10% significance level, the post-test for reading proved to be challenging for students than the pretest.

Looking at the results of this study through a less statistical lens, I used Cohen's calculation to get an alternative effect size. This is a non-statistical analysis of the data where the mean of one group is subtracted from the mean of another group, and the difference is divided by a pooled standard deviation. The results of this equation will fall under one of three categories,

small=.2, medium=.5, or large=.8. The results of the Cohen effect in both reading and listening were small at d=.22 in listening and d=.24 in reading.

Discussion

The following section discusses the study's findings, some probable confounding variables that may have affected its results, and a summary of the researcher's reflective thoughts throughout the delivery of the listening module.

First, the results of this study might be considered marginally positive. The intervention group scored slightly better than the control group in listening, while the control group scored slightly better than the intervention group in reading. Overall, the results of this study were not as robust as I had hoped, nor did they support Aryadoust's (2017) supposition that students' reading comprehension would benefit from listening comprehension skill development. The following are several factors that may have impacted this study's results.

At the outset of this study, there were several potentially detrimental factors that may have influenced its outcome. These factors relate to the study's design, its assessment process, and the listening course.

First, the sample size used was quite small. In the end, the control group was substantially smaller than the intervention group. Using this smaller sample size may have compromised the chances we had at reaching statistical significance. I followed the rule of thumb to use as many student participants as I could get, but that was only to the extent that I received consent from the two classes I enrolled. I lost some of the manageability around the procurement of participants due to the office staff and classroom teachers taking on specific duties to allow me to remain blind to who was participating. According to Olejnik (1984), there is an inverse relationship

between the sample size of a study and the likelihood of reaching statistical significance with hypothesis testing.

Another element that was challenging came with the restraints of acceptable statistical analysis. When a researcher is attempting to conduct research in a classroom, he or she is tied to certain restrictions or limitations that may find reaching statistical significance more challenging. For example, adhering to the .05 or 5% significance that is standard in research becomes challenging with a smaller sample size. Olejnik (1984) recommended using a minimum of 18 participants for testing a hypothesis, and he suggested using a .10 significance level when the sample size is this small.

Additionally, there may have been issues with the assessment process. Since both groups' scores went down in listening and reading during posttesting, two considerations are worth exploring: the test and the testing environment. One possible factor is related to the complexity of language used in the passages. To measure the complexity of these passages, I returned to Lexile measures, and I examined the passages sentence lengths as shown in Table 7 and Table 8. While I had kept all but one of the passages in the recommended range for grade five students, based on the Jerry Johns BRI manual's recommendations (770-1080L) (Johns, Elish-Piper, & Johns, 2017), the posttest stories were, overall, more challenging than the pretest stories. One listening passage was slightly above that range at 1100L. In examining the area of Lexile ranges further, beyond the BRI recommendations, it might be noteworthy that Smith III (2012) stated that the Lexile ranges (955L-1155L), of which three out of four of the posttest Lexile measures fall within, broadly align with Text Complexity Grade Bands 6-8, whereas only one out of the four pretest Lexile measures fall into that same higher-level grade band. I also

Table 7

Lexile Ranges of Texts Pretest and Posttest texts in Listening and Reading

Tests	Listening	Reading
Pretest	870/1000	910/860
Posttest	980/1100	900/1050

Table 8

Mean Sentence Length of Texts Pretest and Posttest texts in Listening and Reading

Tests	Listening	Reading
Pretest	14.11/15.06	12.50/12.38
Posttest	15.50/17.71	12.50/14.29

analyzed the texts by running the passages of each test through an online Lexile leveler software (Metametrics, 2019). The mean lengths of the posttest sentences were higher, providing additional evidence for test inequality.

The time of year of posttesting may have also had a deleterious effect on the results. While I have not found any data to support this potential claim, a few classroom teachers communicated that posttesting this close to the end of the school year could potentially threaten the results of this study. Over the years, they claim to have witnessed a turning point in mid-June that is characterized by a decline in attendance, academic performance, engagement, and manageability. Toward the end of the course, the temperature had risen, classroom management had become slightly more demanding, and attendance had waned, slightly, with students attending sporting tournaments and family getaways.

As teachers, we prioritize creating a safe, trauma-sensitive learning environment for our students. Despite my efforts to do so, an unexpected negative interaction occurred during posttesting. This exchange was between an authority figure, a respected teacher and public

speaker, who had agreed to read the passages during testing, and one fairly new student. A heavy-handed classroom management style put this boy in the spotlight immediately prior to testing. I considered cancelling the testing for that day, but in the end, opted to continue. In consideration of there being an interaction between short-term trauma, performance, and empathy, I believe this challenging interaction may have harmed this student's performance and others who may have empathized. Recent research on the brain's ability to perform in a state of feeling safe versus being in a heightened state known as "flight, fight, or freeze" tells us that short-term stress can have a debilitating effect on brain cell function (University of California, 2008; Souers & Hall, 2016).

Further, research in the area of empathy indicates that we can have reactivity to others' emotions due to empathic concerns that take place in the inferior frontal gyrus and inferior parietal lobule. These areas are thought to be linked to mirror neuron processes (Flournoy et al. 2016). I was keenly aware of how this event may have had a debilitating effect on the student participants' sense of safety, so I broke this group's testing period into two separate days, and the setting went from a wide-open, cool library with a reader whose voice commands attention, to the students' hot classroom with the researcher as the test passage-reader. This interaction and the changes in both the reader and the test-taking venue may have negatively impacted the posttest results.

To aid in the reflection process of teaching this course and connecting it to the study's outcome, I kept a reflexive journal. Each day that I taught, I would spend a little time reviewing the day's lesson and critically thinking about the process. This process led me to a number of conclusions. First, I designed the course with the intent to meet the learning needs of grade fives, but it may have been better matched with students with a little more maturity – perhaps

grade sevens. This course required students to participate in more lecture listening than grade five students are typically accustomed to. While the course design was reasonably balanced in knowledge acquisition and experiential practice sessions, it also demanded the students' attention to follow a PowerPoint for more extended periods. In the future, I would not condense this course into seven weeks, but rather extend it and integrate it into the curriculum.

On the first day, as a hook, I played an eight-minute video of a riveting talk by a 12-year-old Severn Suzuki, who had travelled to Brazil to address the United Nations about the environment. This listening introduction demonstrated the intervention group's potential to listen, and it illustrated how children are engaged by listening to other children. I realized I should capitalize on this insight, but I was rushed to cover the course material, and my 'need' to teach the entire course prohibited me from transferring my observations into practice. If I had been their classroom teacher and had more time to devote to this course, I would have altered it by making it more student-centered and combining it with speaking practice or speech writing around relevant science or social studies inquiries. This course upgrade would have taken some skilled orchestrating, but I believe it would have increased engagement. On the other hand, this course was delivered similarly to the lecture learning that students may expect to encounter more of as they near secondary school entry when their lecture listening skills will be put to the test that much more.

One strength of this course was that it followed a set routine. I prepared each class using the following sequence: (1) write the listening lesson target on the board; (2) begin each lesson with a listening warm-up involving no materials; (3) begin the lecture, PowerPoint, and exercises in their listening workbooks; and, (4) conclude with a listening activity. This group responded well to the routine; they would even remind me when I forgot to write the learning target on the

board. One weakness of the course that may have been a contributing factor in the study's outcome was that goal setting and attitude, two keys to effective listening, according to Brownell & Wolvin, (2010), were not focussed on more. If I were to reteach this course, I would whittle it down to the essentials as a time-saving measure. Additional attention would go to goal setting and attitude check-ins, and I would spend more time on skill development and less time on theory. For example, I would briefly discuss hearing versus listening, the physiology of hearing, and the models of listening, and then I would delve into the skills and try to spend a majority of the time developing them in a variety of ways. While every effort went into designing a quality study, upon reflection, shortcomings were present at every stage of this project.

Chapter 5: Summary, Conclusion, and Recommendations

This chapter summarizes and concludes this project. To begin, it revisits the aim of the study by reviewing the reasons why listening is vital to education, and it reminds us that there is a lack of research in this area, before it presents the essential question that drove this study. This chapter briefly explains the methodology, the hypothesis, and the working definition of listening used in this study. It also provides a brief historical perspective and explanation of significant listening models before delineating numerous limitations and recommendations for teaching and further research. The chapter culminates with a reflection of lessons learned and a conclusion to this entire process.

This investigation aimed to discover how a comprehensive listening course would impact learning with intermediate elementary students by investigating the effects of teaching comprehensive listening strategies in the classroom. There is an extensive body of listening research at the post-secondary level but little at the elementary-aged level. The essential question asked was: How does comprehensive listening instruction impact performance in a lecture-style learning environment with elementary-aged students?

Listening is an essential component of communication in many areas of life, including the helping fields, education, medicine, and business. Recent Aboriginal Education initiatives and prescribed curriculum highlight the importance of listening and oral traditions, but a gap exists between what is to be taught and how prepared teachers are to provide this instruction. Many educators are not adequately equipped to teach this critical life-skill (Bodie, 2008; Hopper, 2007). This study intended to provide evidence for listening instruction, and it was designed to provide educators with a promising format in which to teach it.

Pretesting and posttesting was used in the present study that followed a quantitative, quasi-experimental methodology. The hypothesis was that when elementary-level students were introduced to an age-appropriate listening intervention, their listening skills would demonstrate statistically significant improvement over students who did not receive this instruction. The null hypothesis was that there was no difference in listening comprehension performance between two groups after one completed a listening comprehension course. The goals of this study were to measure the positive effects of listening instruction on listening comprehension and to examine if there were any synergistic effects on reading. The listening intervention was the independent variable, while the changes made in listening and reading comprehension were the dependent variables.

Listening is defined as "attending, receiving, interpreting, and responding to a message that is presented aurally (Bodie, 2008). A brief history of listening outlined that research in this area began in the early 1940s, with listening being taught as a college course as early as 1945 by Ralph Nichols, the man deemed the father of listening and whose quote begins this paper. A focus on listening comprehension occurred through the 1990s before other areas of listening began to take centre stage.

Several models of listening were presented. The heuristic model explains listening as involving three-steps that include: (1) bringing our own listening experiences and background knowledge to the listening encounter (presage); (2) using an information-processing model to explain how we take in the information that we hear and then process it and put it into memory (process); and, (3) the outcome or effect of that listening process which may be related to accumulating knowledge, learning, or relational (product) (Bodie, Worthington, Imhof, & Cooper, 2008). In 1996, Wolvin and Coakley presented their model of listening. Similarly, it

follows a sequential approach to listening and highlights our background knowledge as helpful, but it also recognizes the use of schemata to help us to make sense of the content of our listening. Brownell (2013) described the HURIER model. The name of this model comprises of an acronym of the elements that make up the listening process, and it acknowledges that listening starts by hearing and understanding, and at that point, we use certain types of memory to help us to understand and evaluate before responding to what we have listened to.

Finally, Goss (1982) presented a model that breaks listening comprehension down into levels. The first is signal processing, which is a surface level of language processing done before making meaning using a higher level of literal or reflective processing. Similarly, Aryadoust (2017), presented the integrated theory of comprehension. This framework combines listening and reading, as these skills utilize similar brain activation. This framework presents the initial taking in of information via sight and sound before processing it and making meaning using the information processing model. Further, he describes comprehension as occurring as a result of semantic understanding that allows for mental imagery, making inferences, and making elaborations based on the schema created by the listener's repertoire of experiences.

A review of the literature related to listening comprehension revealed that reading and listening progress similarly in learners, but that listening develops even without instruction when compared to reading (Royer, Sinatra, and Schumer, 1990). Keenan et al., (2006) uncovered that there is a genetic component to both our listening and reading comprehension abilities and that challenges in one area often mean challenges in the other. Carlisle and Felbinger (1991) discovered that reading ability might be linked to listening ability. Additionally, their research outlined that poorer listeners demonstrate better processing of general ideas than details, and they exhibit some cognitive inflexibility. Through the use of fMRI, Berl et al. (2010) scanned and

observed the brain activity of students while they were listening and reading. These researchers confirmed that both of these skills utilize similar brain activation but that reading stimulates a more expansive portion of the brain.

Listening styles have also been the focus of some research. According to Weaver et al. (1996), there is a type of listener, termed a content listener, whom they described as having a preference for involved, factual information. This type of listener also fits into a personality type described as needing cognitive stimulation. Correspondingly, Capcaiappo and Petty (1982) described this "type" of personality as one that demonstrates a higher level of intelligence. On a cautionary note, Worthington (2008) found limitations around the reliability of research where personalities, needs for cognition, and intelligence are correlated.

Glonek and King (2014) found that listeners remember narrative-formatted passages over expository-formatted passages. Simultaneously, they uncovered that information would be remembered better when delivered at a regular rate over a delivery rate that is compressed by 30%. Imhof (1998) suggested that in a lecture setting, students will get the most out of their listening by working on synthesizing, manipulating their attitude and motivation, controlling their focus, being aware of their schema, and using metacognition. In her 2001 research, she reported that of those strategies, the ones being used the most by students comprised of interest management, pre-questioning, and elaborations, including mental imagery.

The extensive amount of information provided by this vast body of research has assisted with the planning and design of this study, while the fact that so little attention has gone to elementary level listening research has been the impetus for this investigation.

Limitations

There were several limitations to this study. First, there was a small and uneven sample size. Rusticus and Lovato (2014) recommended that the intervention group and the control group be mirror images of each other, as unequal sample sizes can lead to a loss in statistical power and an increase in Type 1 errors. There were 26 participants in the intervention group and only 17 participants in the control group. These two groups would have been reasonably balanced had every student in each of the classes returned their consent forms. There were slightly more English-Language-Learner (ELL) students in the control group and more students with learning difficulties related to dyslexia in the intervention group. Had everyone participated, the groups would have closely matched.

While validity and reliability were priorities in the design of this study, there were several unforeseen flaws that may have impacted the results. For instance, an incident occurred between the test reader and a student. It led to a change in the setting and the reader. These changes impacted the test-retest reliability of this study, as the reader changed from a talented public speaker to the researcher, and the setting lost consistency by going from the library to the students' classrooms.

Another limitation of this study was related to the assessment tool and the selection of passages. As discussed, the complexity of the language of the passages increased in both listening and reading in the posttests, where the Lexile number ascribed to each passage was generally higher and the sentence lengths longer. These differences between the two tests may have negatively impacted the internal consistency of the assessment of this study. One additional unproven but viable limitation regarding assessment is related to the time of

posttesting, which took place in mid-June, when students may be losing some focus as the summer is drawing near.

The final broad limitation of this study is in the course's design and delivery. While I attempted to make the listening comprehension course age-appropriate, there were shortfalls. The content and the experiential activities were well balanced, but there was a breakdown in the timing and in creating engagement. The intervention group was not accustomed to lecture-style learning, yet that was how a percentage of the course was delivered. It was designed to simulate a learning environment that older students might encounter more often. The intervention group thrives in a learning environment where they are expected to create and perform. As a class, and typical for this age, the intervention group is most engaged when they are creating skits, working with their hands to demonstrate their learning, or socializing in group discussions. These types of activities were utilized minimally in this listening course due to time restrictions and being unaware of the learning personality of this group at the time of course development.

One final note about the limitations of this study includes the potential for a particular attitude that could have become a confounding factor. Seamless embedding of the listening course into the language arts curriculum was not accomplished. Students were aware that the listening course was part of this study and that they were not being graded for it. This awareness may have been somewhat demotivating for some, and for others, it may have been motivating. We concluded the course with a talking-stick reflective activity. One student shared that he wished he had bought into the listening course earlier. There may have been others who felt the same way. I recall one student saying sorry as she submitted one of her posttest forms. I believe she felt pressure to make my study successful. Individual attitudes and personal motivation may have played a part in the successes and failures related to the results of this study.

Recommendations for Teaching Listening Comprehension

Based on the findings of this study, there are several recommendations for teaching listening comprehension at the intermediate-grade level. Teachers may want to consider the following points when teaching listening:

Allow yourself enough time. When teaching listening strategies, integrate them with other subjects such as language arts, science, social studies, and possibly a second language, so that students may have the opportunity to apply their newly acquired listening skills and transfer them to their real learning opportunities. Students in this study were not allowed the opportunity to integrate newly acquired skills into their classroom practices, nor were they given enough time and practice in a variety of ways to truly acquire and become skilled at using the listening comprehension strategies they were learning. Integrating the strategies into the curriculum with practice would have brought significance and meaning to the learning that was taking place. The results of this study indicate that the bridging of strategies to classroom learning was not reached sufficiently. Extra time on each strategy and integrating the skills into other subjects would have been beneficial.

Create and present meaningful learning targets. By introducing learning targets, students can identify what they are supposed to accomplish during any given lesson and hopefully connect their newly acquired skills to their learning practices. Listening targets are stated using student-friendly language. By providing a learning target, students recognize the what and the why of their learning – demystifying what it is they are supposed to be learning and accomplishing in any given lesson, bringing synergy to the learning experience. The learning target for each day's lesson went on the board, along with a visual. This symbol and the

descriptor allowed the students and the teacher-researcher to stay focussed and aligned. Students grew to depend on it, for when it was omitted, students noted so and requested it.

Make learning opportunities personally meaningful to students. The more that students can see the relevance a lesson has to their own lives, the more engaged in learning they appear to be. Upon the conclusion of this study, students provided feedback indicating that they shared a keen interest in the notetaking portion of this course. This 'favourite' part of the course was something students could identify needing in their immediate future. The more that an instructor can correlate a lesson to its usefulness in students' lives, the more students will value what it is they are being asked to engage within their learning. Note-taking was a lesson that students recognized as relevant in their lives; following directions was another skill they could see value in. Making inferences and visualizing were harder to connect to. Paying attention to how students perceive the importance and relevance of listening to their immediate lives may assist with creating engagement when teaching listening skills.

Ensure that listening strategies are taught using age-appropriate methods. In the process of teaching this course, it became clear that age-appropriateness played a pivotal role in its successes and its failures. Students need to be ready to participate inside this traditional style of learning, and while some were ready, many appeared to be quite young for this type of learning. It was evident that many of the exercises we did were very age-appropriate, for they involved providing signals for agreement and disagreement, body movement, colouring, and drawing. These types of exercises appeared to capture the interest of the entire class, but as soon as we embarked upon abstract exercises that involved less movement and longer lengths of lectures and listening, a portion of the class's eyes appeared to almost glaze over. I lost several students' interest or attention at that point, and only a small representation of the class continued

to participate, while the rest got very quiet. This course, as I taught it, was a fit for some of the more mature students, but it missed a significant number of them based on their current level of development. In the future, I would be more mindful of the group I am teaching and their development in terms of learning preferences.

Recommendations for Research in Listening Comprehension

Based on the findings of this study, there are several recommendations for future research in listening comprehension. Researchers may want to consider the following points:

Embark on additional research with younger students. Due to the age of the groups in this study, this research could be considered useful as one step into an area of research where there is very little information available. Most of the literature on listening comprehension is at the college level; therefore, further listening comprehension research with a younger demographic would be worthwhile. This is an essential aspect of listening research that has yet to be fully accessed.

Plan your study with sample size and statistical analysis at the forefront. By planning the participant sample size and statistical analysis carefully, one is more likely to streamline the analysis stage of the study, increasing the chances that the desired outcome is reached. In this study, I did not plan the statistical analysis out thoroughly, and I expected that the two groups would be well matched and large enough for a positive result; this was likely not the case. In an attempt to remain blind to whom my participants were, I did not take an active role in the management of obtaining consent from each potential participant. I had the full support, cooperation, and assistance from the classroom teachers and office staff, but I did not communicate the importance of almost 100% participation. There was only one student who seemingly opted out, but to a high degree, it was organization and management, or a lack thereof

on my part, that led to challenges in obtaining participants. If I were to repeat this study, I would plan to enroll four classes in total so to boost the sample size, and I would increase my communication to those collecting consent to ensure the maximum number of students participate.

Furthermore, I would plan to meet with a statistician before starting the study and discuss the sample size and the statistical plan in advance so that every step of the study was thoroughly devised. In the case of this study, these elements of the plan were vague, and this caused a need to meet on several occasions to repeat statistical analysis. This was both costly and inefficient.

Consider your listening assessment carefully. The listening course design may be somewhat dependent on the assessment being used. While I found the content of the Jerry Johns BRI to be very workable, as its line of questions matched well with the lessons I intended to teach, it did not cover the entirety of the course. In the future, I would consider pretesting and posttesting with additional aspects of listening that were not covered in the Jerry Johns BRI. I would also consider quizzing at the end of each skill section before doing a larger summative post-test. This would increase the amount of raw data to be collected and analyzed.

Consider keeping a reflexive journal. Regardless of the nature of research, keeping a record of the events and one's reflections of this process is invaluable to a study. A reflexive journal provides a space for critical analysis and reflective thoughts to be recorded. I kept a reflexive journal during the time of the course. If I were to repeat this process, I would begin keeping the journal from the very start of the study to the end as it provides a time and place to be with your thoughts, and it allows one the space and an opportunity to sort thoughts more effectively than when they are swirling in one's mind. Keeping a reflexive journal also provides a record of the process, which is invaluable when it comes to write up the study.

Lessons Learned

This study was my first attempt at conducting research, and a few missteps and shortcomings occurred along the way. The significant areas of weakness of this study were in the planning process, my inflexibility, and communication.

Even though I had been made aware of the importance of planning, I had not prepared myself for the tremendous amount of forethought and resourcefulness that it would require. The elements of planning that I did not pay enough attention to include obtaining the appropriate sample size to align with my statistical analysis goals. Moreover, I did not take the time to learn enough about the potential statistical tests and the confinements related to samples sizes that must be considered for statistical significance to be reached. Ensuring that a robust, highly reliable assessment tool was used was another oversight. While I thought I had planned the testing out thoroughly, student interest and background knowledge related to the passages did not receive any consideration. Notwithstanding my effort to deliver pretests and posttests of equal difficulty, the ascribed Lexile measures and analysis of sentence lengths indicate that more planning into the assessment tool should have taken place. Finally, the course concluded, and posttesting occurred in mid-June. A little more attention to timing would have been beneficial. If I had communicated more with colleagues, I would have come to realize that my study needed to be condensed and finished before mid-June. In the future, far more detailed planning would go into each of these areas.

Another lesson learned is related to the need for flexibility toward and responsiveness to the process and the people. I developed the course the summer before the spring of when I began to teach it. Early on, I could see that there might be a discrepancy between my intervention group's maturity, the group learning style, and the course design. I contemplated

spending time revising the course to make it more actively engaging but felt that it would be time-consuming and require me to eliminate elements of the course that I deemed valuable. My inflexibility or non-responsiveness may have come with a high cost to the results. In the future, I would make every effort to match a course to its learners.

The importance of communication is another lesson learned. I should have taken a slightly more dominant role in shaping this entire experience. There is a balance when working with others, that one may strive toward so to fulfill one's own agenda whilst getting along with others. I wish I had taken a more involved and fastidious role in ensuring maximum participation in the study. Additionally, I would have had a conversation with colleagues to ensure that the safe and caring environment that I set out to create would be present at every single moment of this study. The event where the conflict occurred between an adult and a student was complex and very unexpected, leaving me unsure of how to respond. Upon reflection, I regret not being more responsive. In summary, communicating with others while remaining buttressed in the goals, objectives, and promises of the study would have taken a more significant priority.

Conclusion

To summarize, this chapter briefly reviewed the current listening comprehension study. Listening is an undeniably vital skill to acquire both inside and outside the classroom. The field of education recognizes the importance of listening and has placed it into current curriculum mandates, but actual teacher knowledge and access to resources remain areas for further development.

The present study quantitatively measured the improvement made after one grade five group participated in a listening comprehension course. This group of students was introduced

to listening theory and practice before being measured against a control group in listening and reading comprehension. The results of this study were positive but weak in listening comprehension and slightly negative in reading comprehension. While researching listening comprehension in an elementary school is very worthwhile, it also comes with its challenges. In the case of this study, complications arose related to participant enrollment, sample size, planning the design of this study, testing, and the delivery of the intervention.

After completing this investigation into listening comprehension, it remains clear to me that listening deserves a more prominent role in our classrooms. While verifying the efficacy of this intervention proved to be more difficult than expected, I hope that educators recognize the importance of listening and find both the motivation and the access to learning and resources to teach this crucial skill effectively.

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Appendix

Consent Form for Participation in the Study

UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA

RESEARCH PARTICIPANT CONSENT FORM

Please read this page and sign the appropriate statement. Please separate this page from the rest of this booklet and return it to the elementary school office admin assistants. By providing your consent, you are not waiving your legal rights or releasing the investigator(s)or involved institution(s) from their legal and professional responsibilities.

Study: Learning to Learn: A Quantitative Study of Listening Comprehension in the Elementary Classroom

PARENT/GUARDIAN SECTION:
Please check next to the appropriate statement:

_____ I consent to my child's participation in the study

_____ I do not consent to my child's participation in the study

_____
Printed Name of Parent/Guardian)

_____ _____
Parent/Guardian Signature Date

STUDENT SECTION:

Please add your initials next to the appropriate statement:

_____ I consent to my participation in the study

_____ I do not consent to my participation in the study

_____
Printed name of Participant

_____ _____
Participant's Signature Date